

Appendix B

Meteorological Data

This section contains meteorological data derived from various regulatory and non-regulatory sites. The data provides a comparative analysis of winds speed, wind direction, wind gusts and concentration data. Please note that meteorological instruments measure at different heights, and at different time intervals. By taking, the actual time of measurement and assuring that all data represented is in Pacific Standard Time (PST) there is uniformity of the data. In addition, not all stations measure at the exact same time, i.e. measurements at 053 and 056 therefore, comparisons are measurements within a 60-minute period. While there may be some overlapping and slight differences the comparative analysis provides the reader with a better understanding of the regional effect of the Exceptional Event.

FIGURE B-1
METEOROLOGICAL SITES IN SOUTHEASTERN CALIFORNIA AND YUMA, ARIZONA

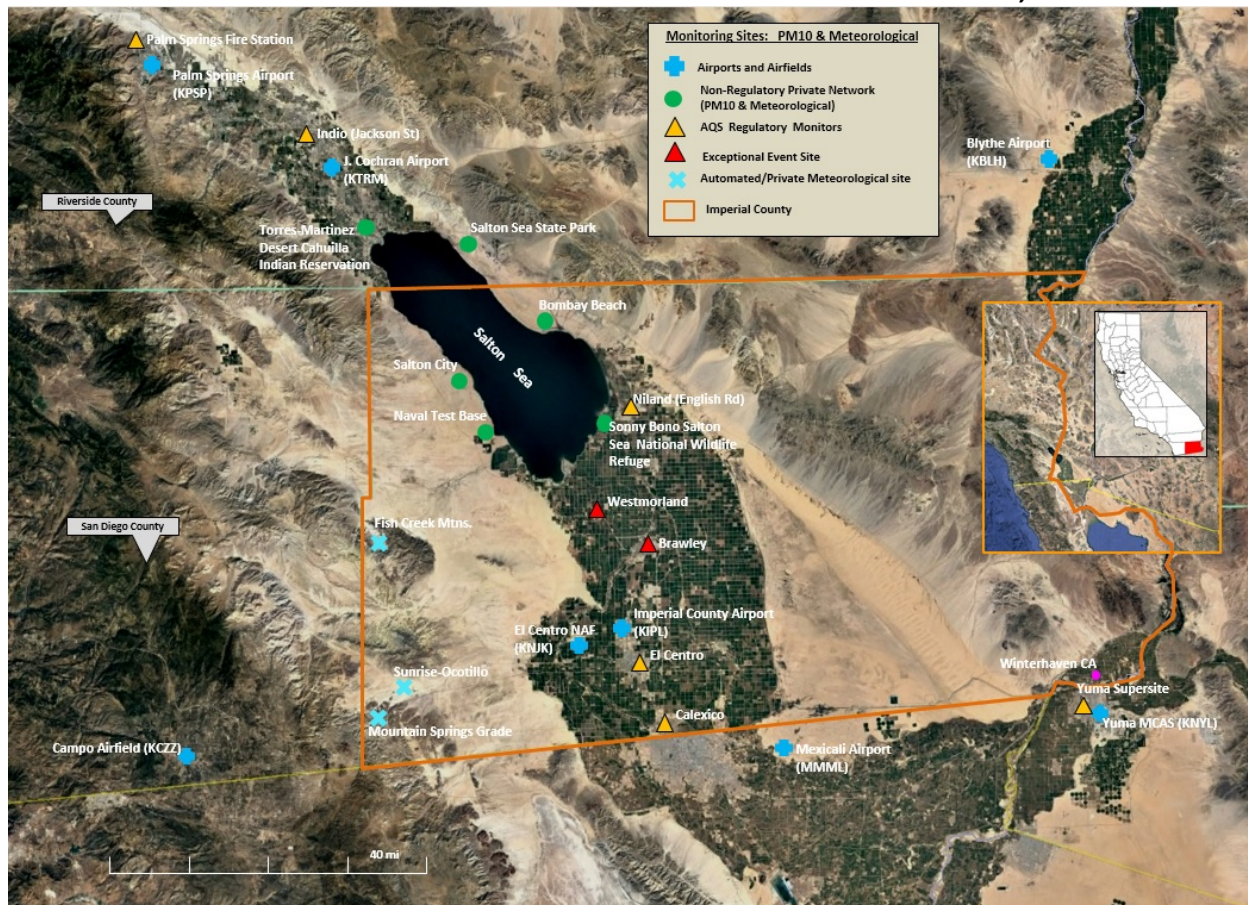


Fig B-1: This image shows the meteorological sites and the air quality monitoring sites used in this document. Google Earth base map. Inset locator map of California from Wikipedia

IMPERIAL COUNTY SITES FIGURES B-2 THROUGH B-8

FIGURE B-2
IMPERIAL COUNTY AIRPORT (KIPL)
WIND SPEED (AVERAGES) & GUSTS AND DIRECTION

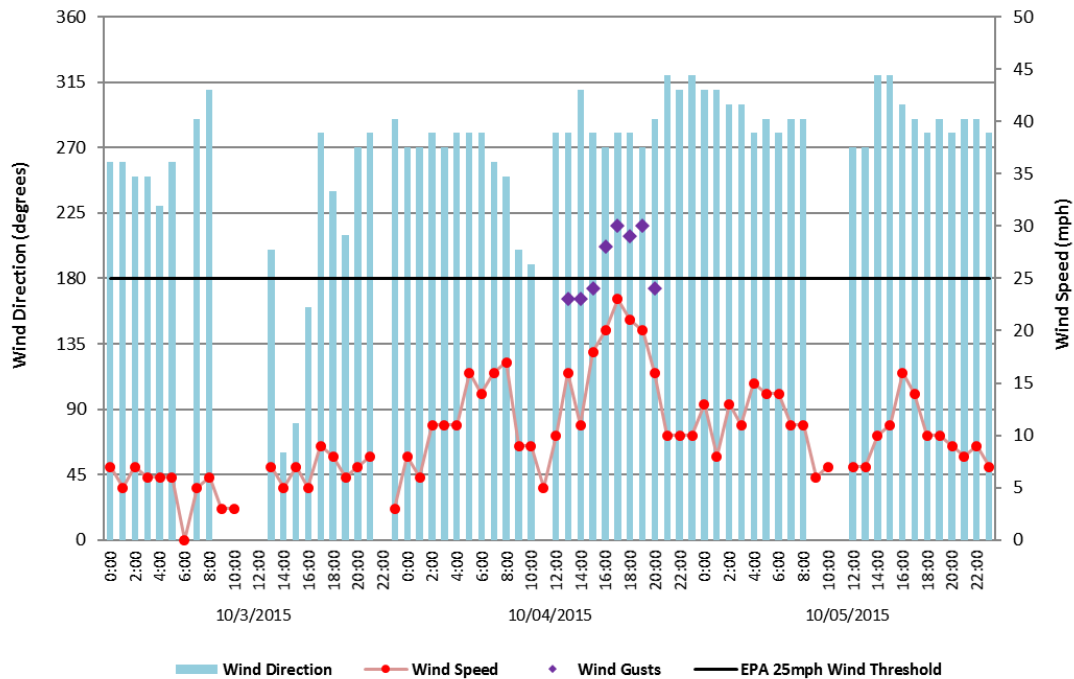
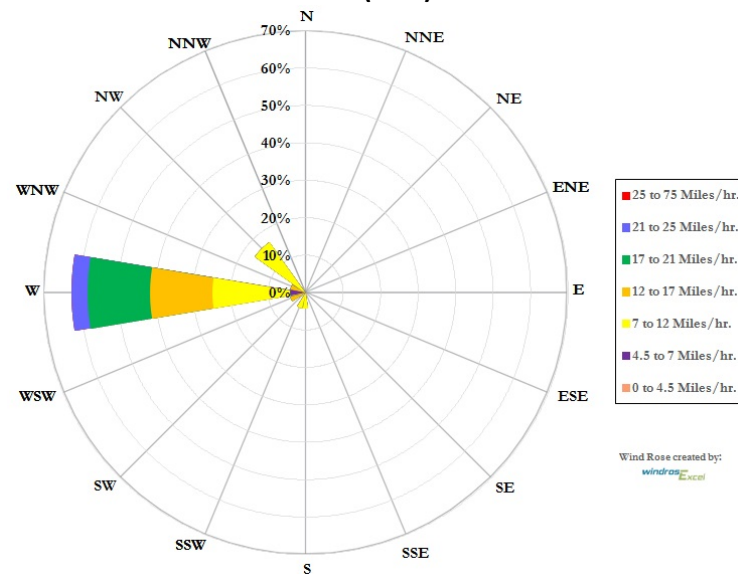


FIGURE B-3
IMPERIAL COUNTY AIRPORT (KIPL) WIND ROSE - OCTOBER 4



Figs B-2 & B-3: Imperial County Airport experienced predominantly westerly winds.
Source: NCEI's QCLCD system

FIGURE B-4
EL CENTRO NAF (KNJK) WIND SPEED & DIRECTION
WIND SPEED (AVERAGES) & GUSTS AND DIRECTION

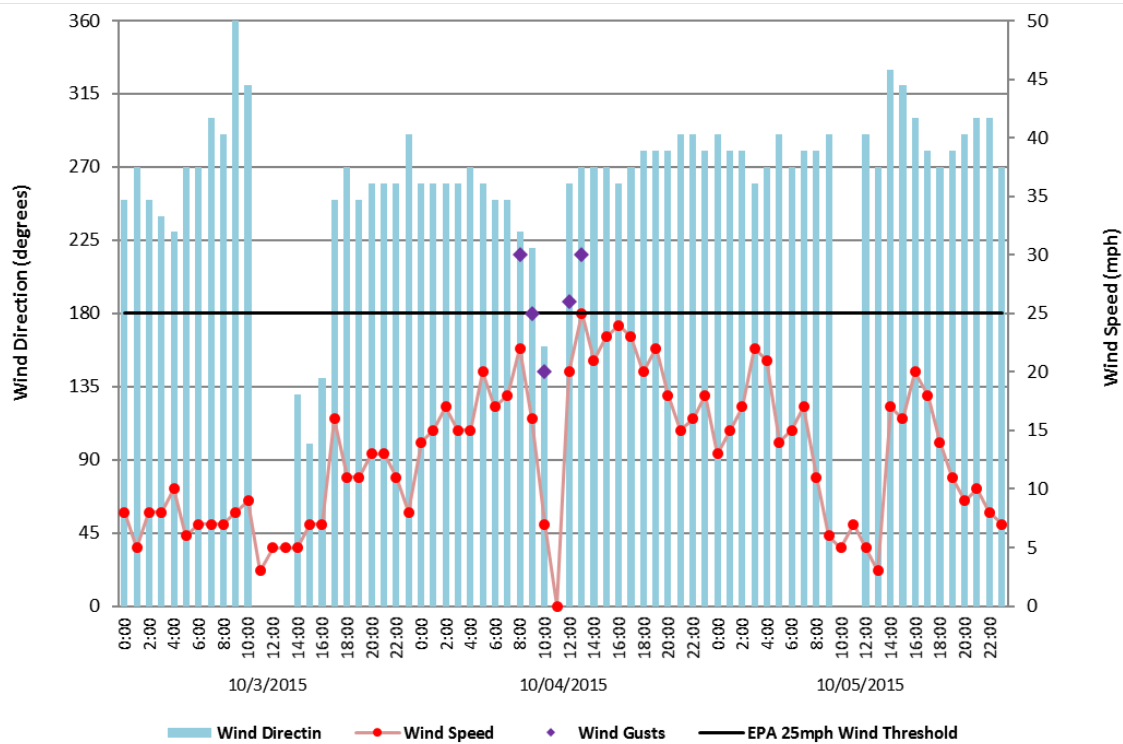
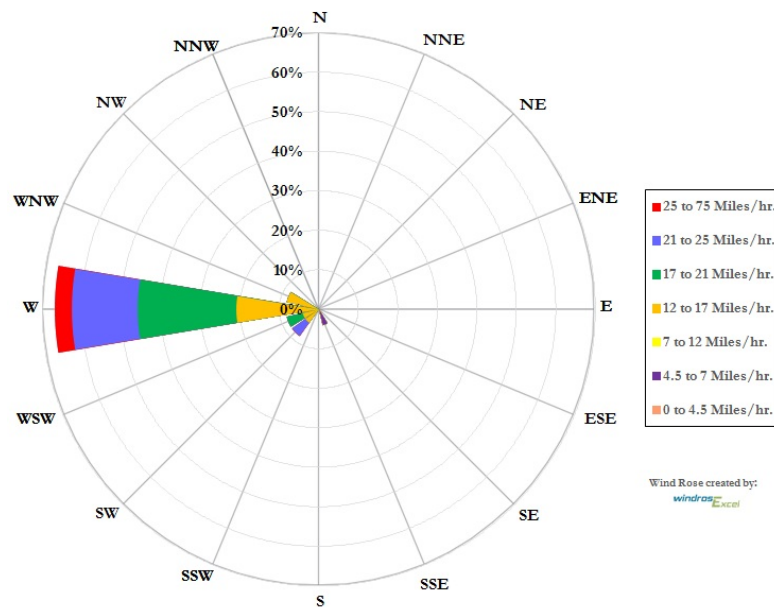


FIGURE B-5
EL CENTRO NAF (KNJK) WIND ROSE – OCTOBER 4



Figs B-4 & B-5: El Centro NAF experienced predominantly westerly winds.
 Source: NCEI's QCLCD system

FIGURE B-6
EL CENTRO (9TH ST) WIND SPEED & DIRECTION
WIND SPEED (AVERAGES) AND DIRECTION

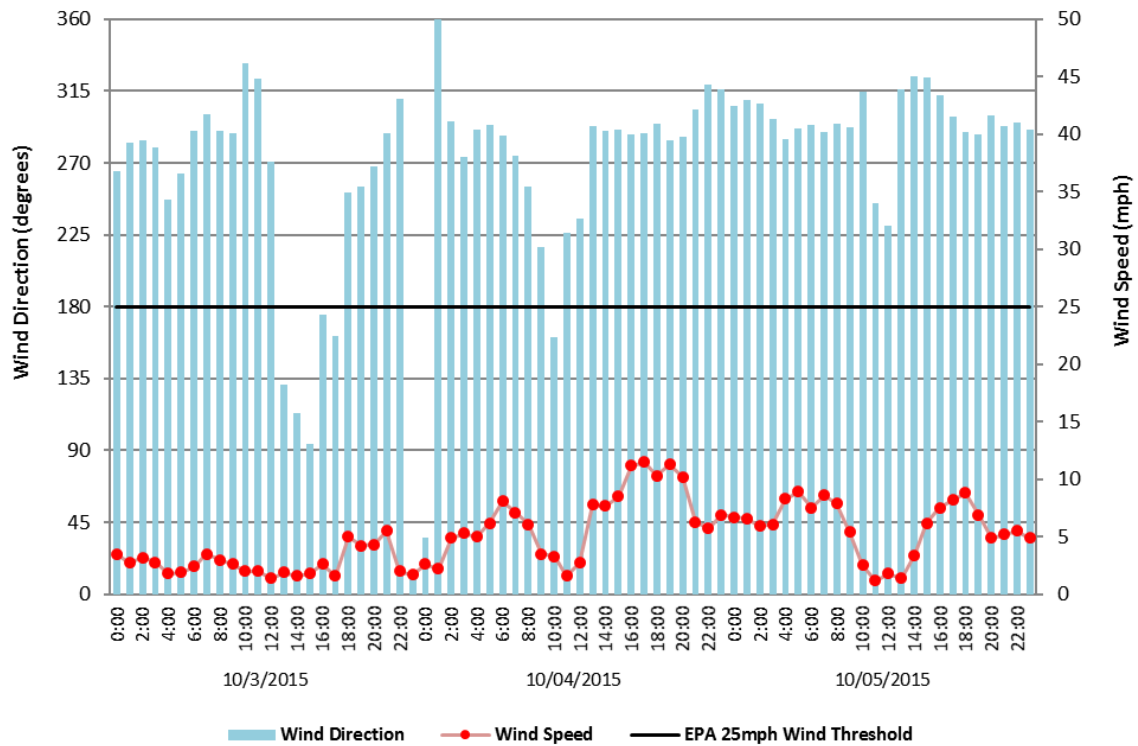
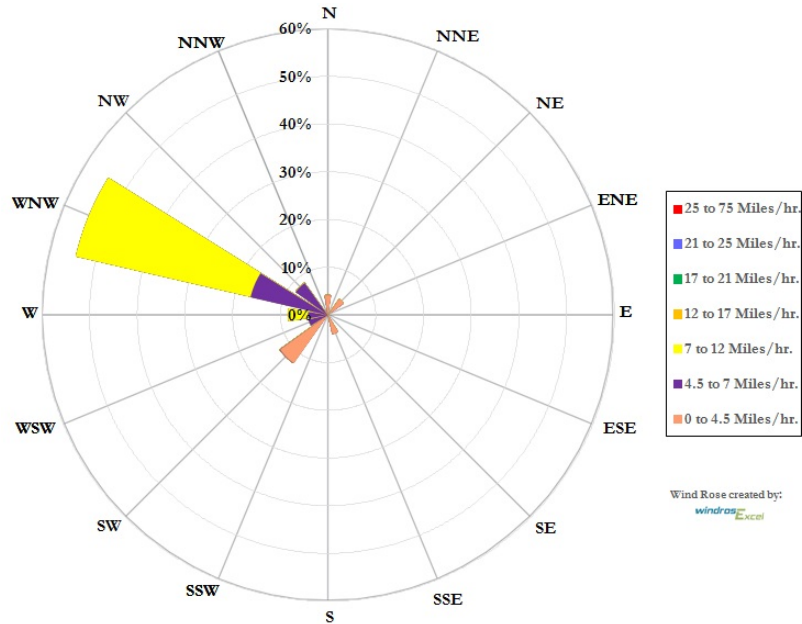


FIGURE B-7
EL CENTRO STATION WIND ROSE – OCTOBER 4



Figs B-6 & B-7: El Centro had mostly WNW winds on October 4. Wind data from AQS.

FIGURE B-8
NILAND WIND SPEED & DIRECTION
WIND SPEED (AVERAGES) AND DIRECTION

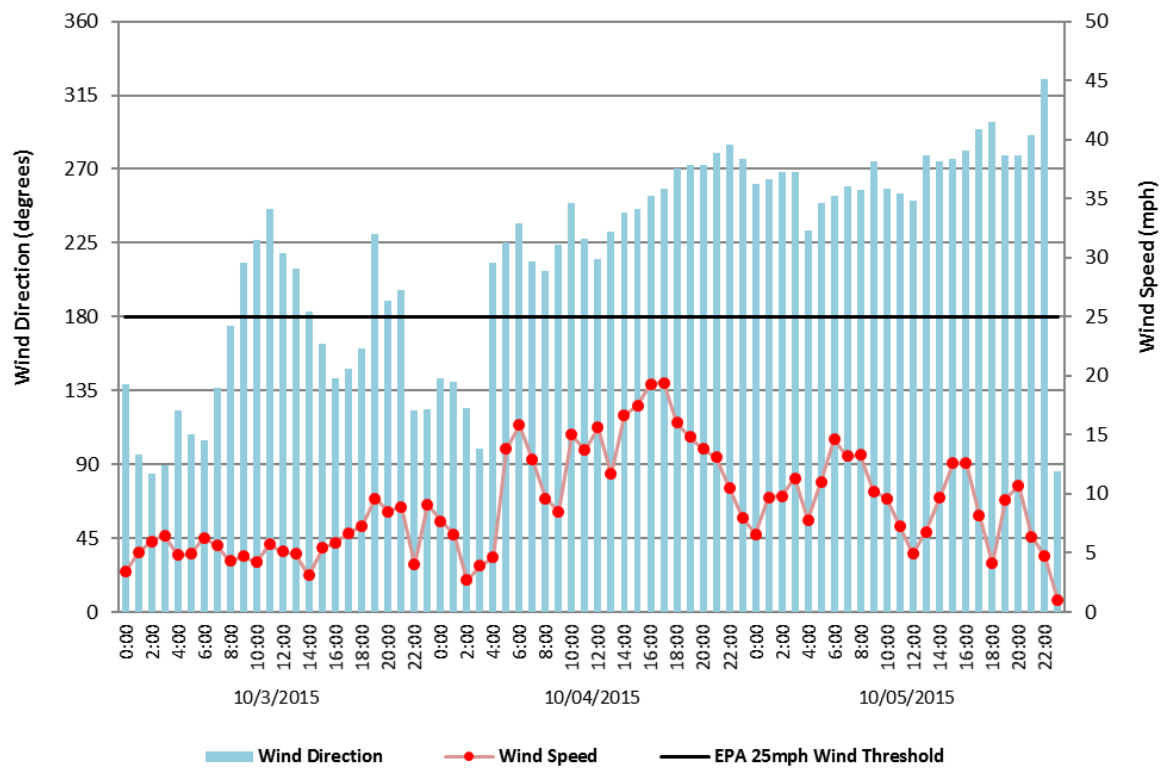
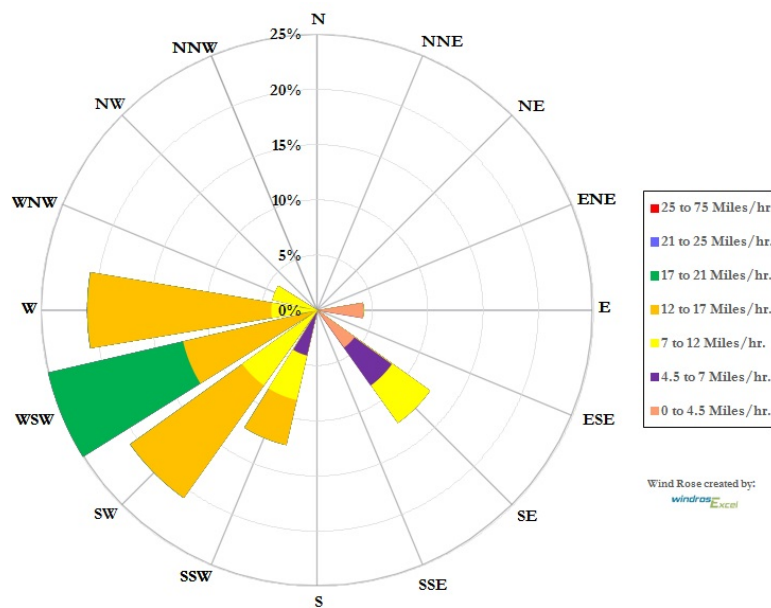


FIGURE B-9
NILAND (ENGLISH RD) WIND ROSE – OCTOBER 4



Figs B-8 & B-9: Niland had mostly W to WSW winds on October 4. Wind data from AQS

FIGURE B-10
WESTMORLAND WIND SPEED & DIRECTION
WIND SPEED (AVERAGES) AND DIRECTION

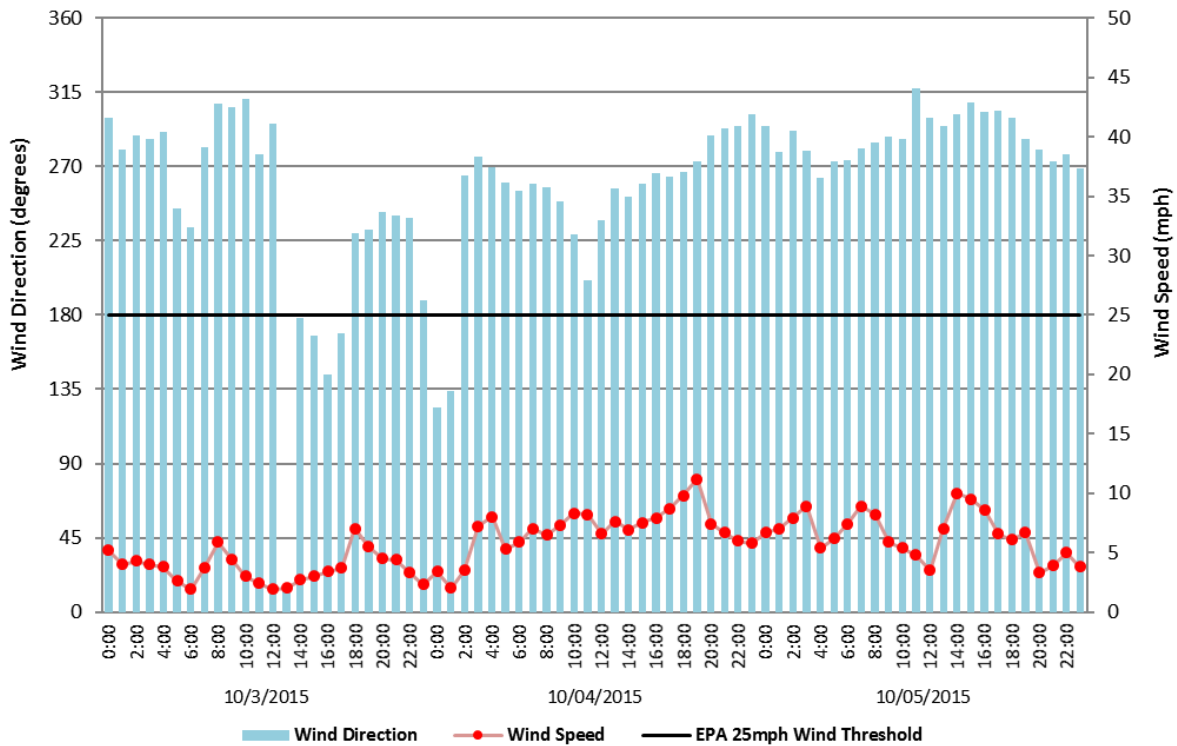
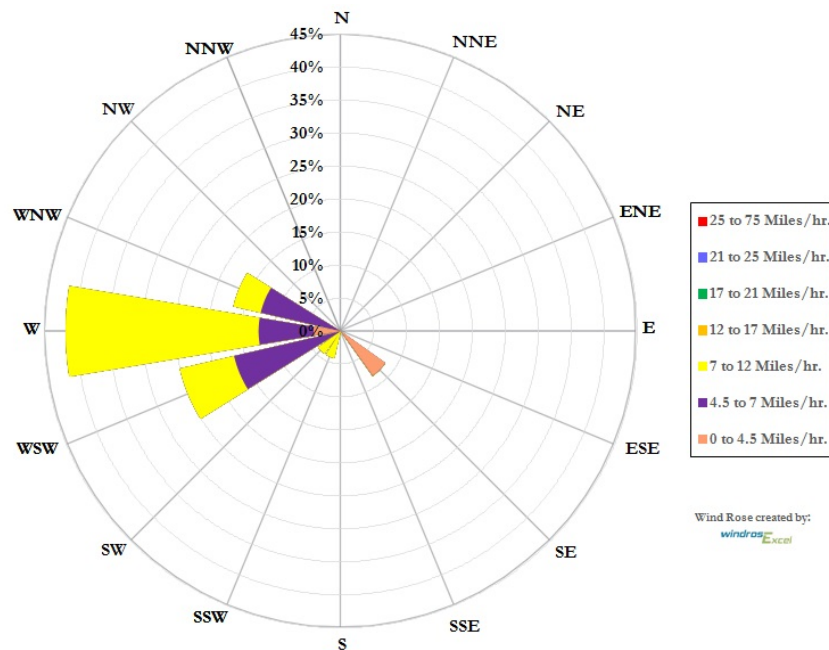


FIGURE B-11
WESTMORLAND WIND ROSE – OCTOBER 4



Figs B-10 & B-11: Westmorland had mostly west winds on October 4. Wind data from AQS

EASTERN RIVERSIDE COUNTY SITES

FIGURE B-12
PALM SPRINGS INTERNATIONAL AIRPORT (KPSP)
WIND SPEED (AVERAGES) & GUSTS AND DIRECTION

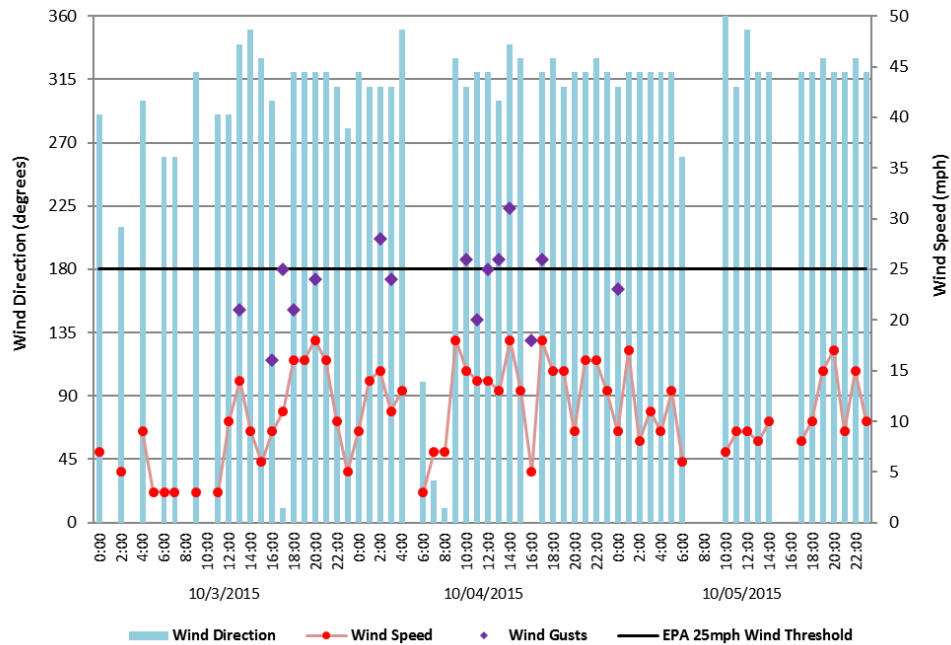


Fig B-12: Palm Springs Airport wind data from the NCEI's QCLCD system

FIGURE B-13
JACQUELINE COCHRAN REGIONAL AIRPORT (KTRM)
WIND SPEED (AVERAGES) & GUSTS AND DIRECTION

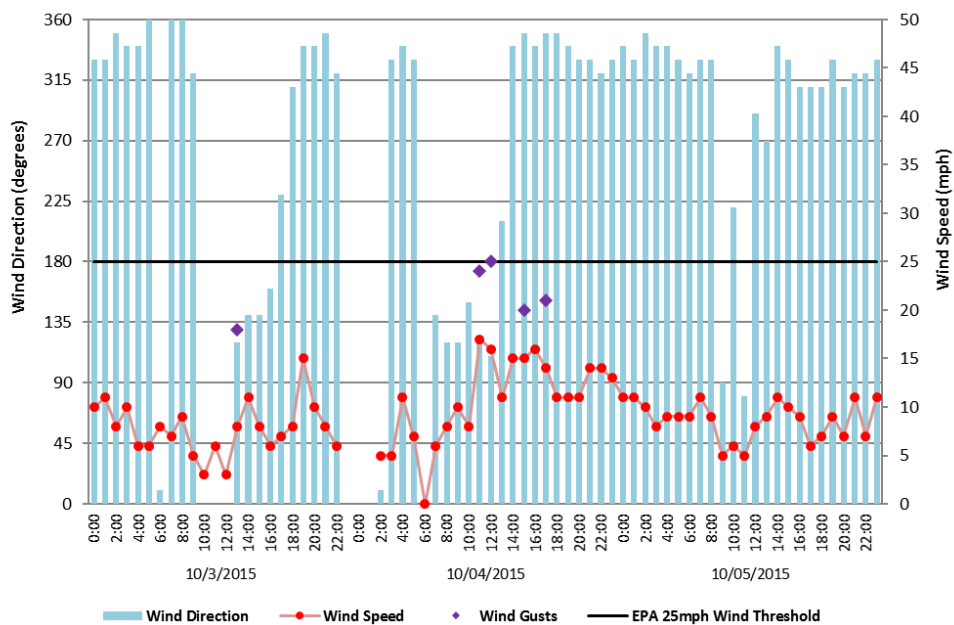


Fig B-13: Jacqueline Cochran Airport wind data from the NCEI's QCLCD system

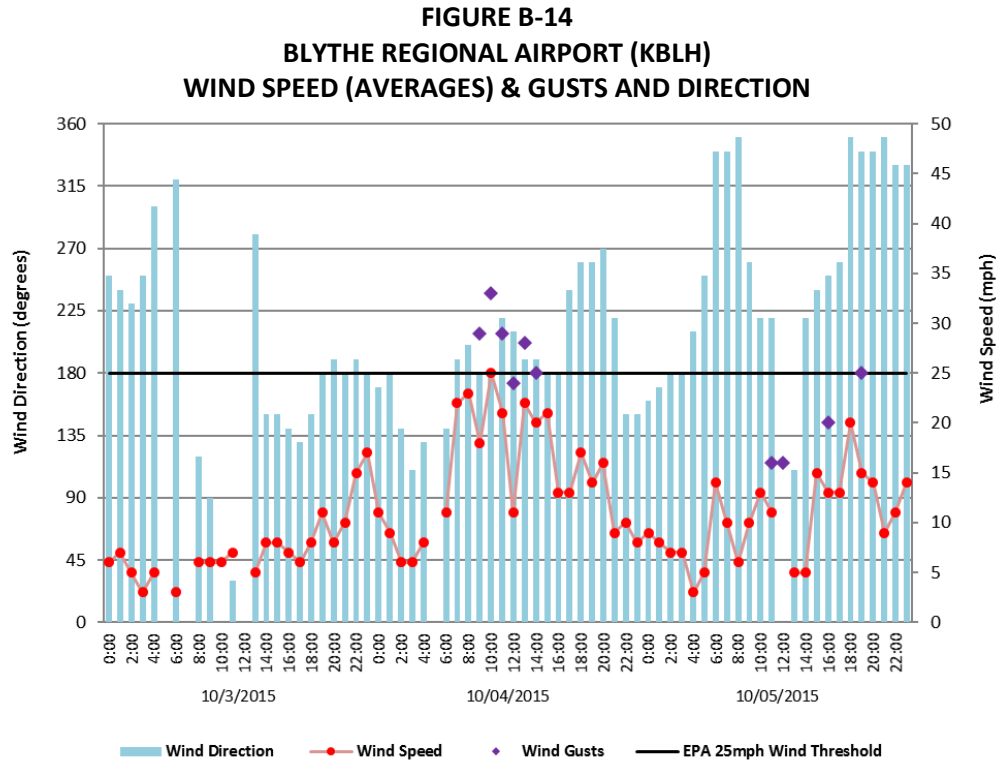


Fig B-14: Blythe Airport wind data from the NCEI's QCLCD system

SOUTHERN SAN DIEGO COUNTY

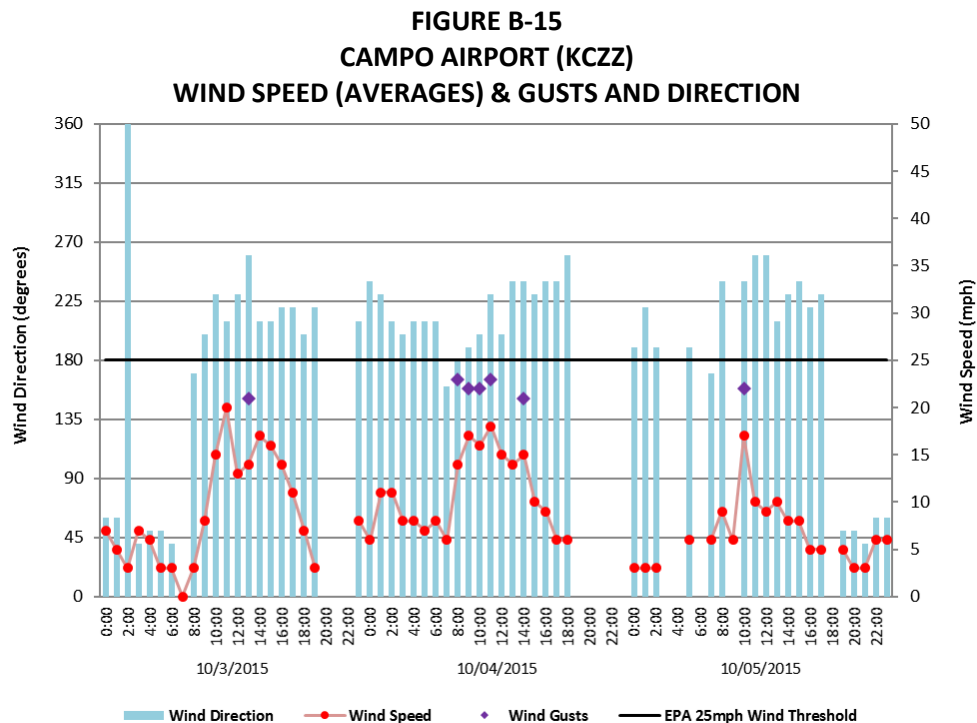


Fig B -15: Campo Airport wind data from the NCEI's QCLCD system

SOUTHWESTERN ARIZONA

FIGURE B-16
YUMA MCAS (KNYL)
WIND SPEED (AVERAGES) & GUSTS AND DIRECTION

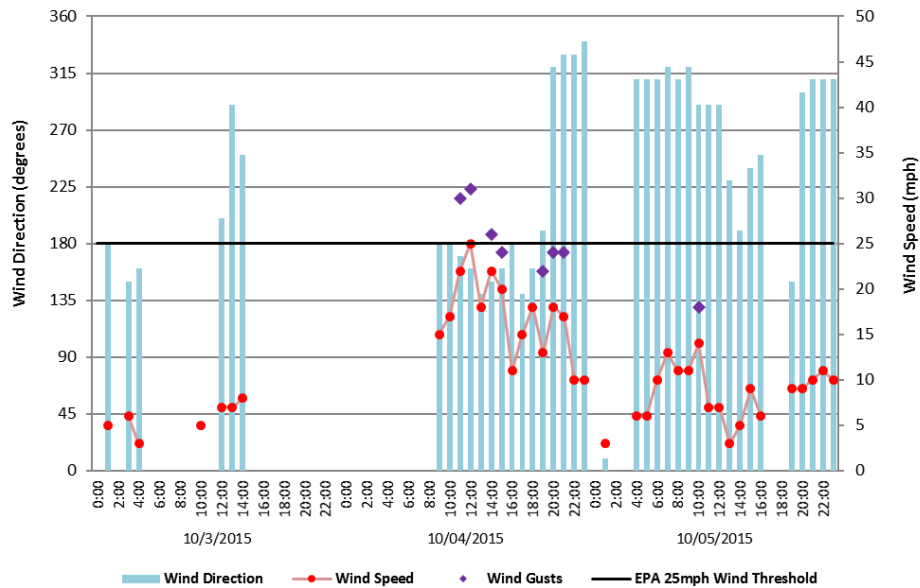


Fig B-16: Some data for KNYL is missing. Wind data from the NCEI's QCLCD system

MEXICO

FIGURE B-17
MEXICALI INTERNATIONAL AIRPORT (MMML)
WIND SPEED (AVERAGES) AND DIRECTION

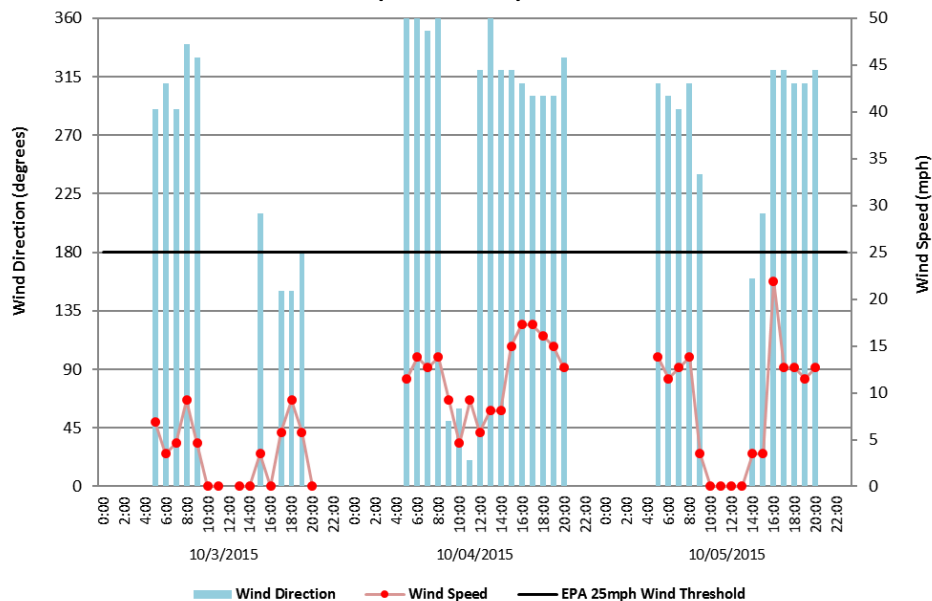


Fig B-17: Some data for MMML is missing. Wind data from the University of Utah's MesoWest system

UPSTREAM WIND SITES

FIGURE B-18
MOUNTAIN SPRINGS GRADE
WIND SPEED (AVERAGES) & GUSTS AND DIRECTION

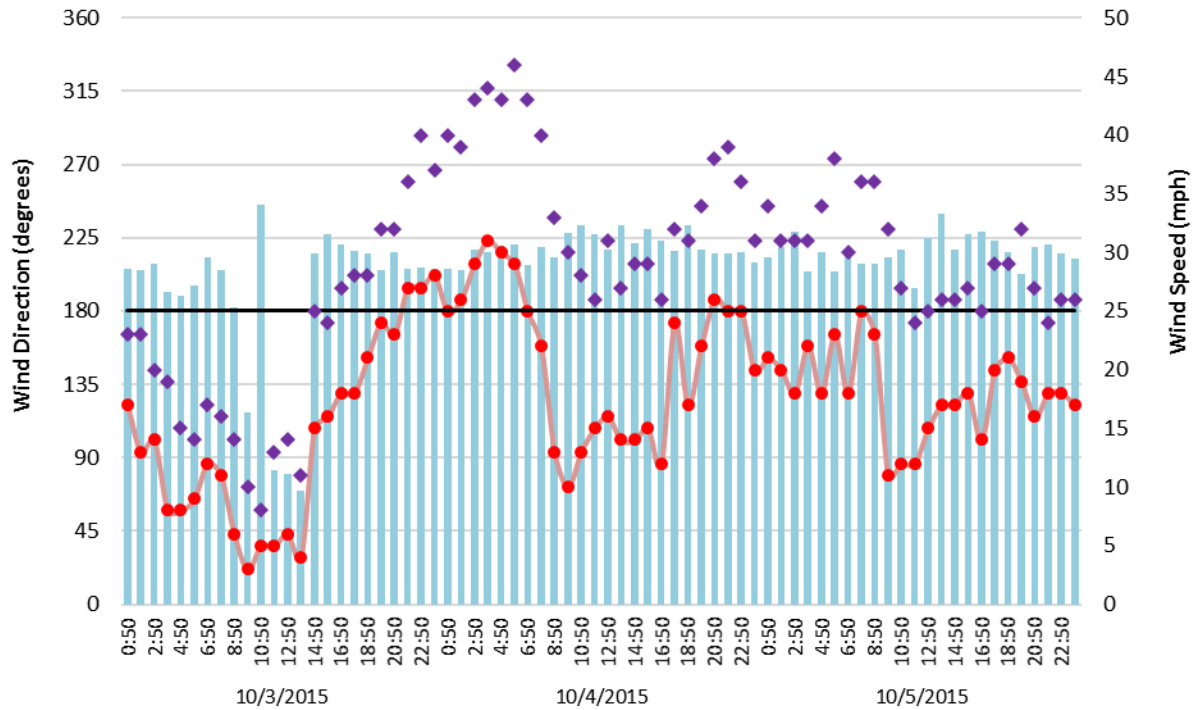
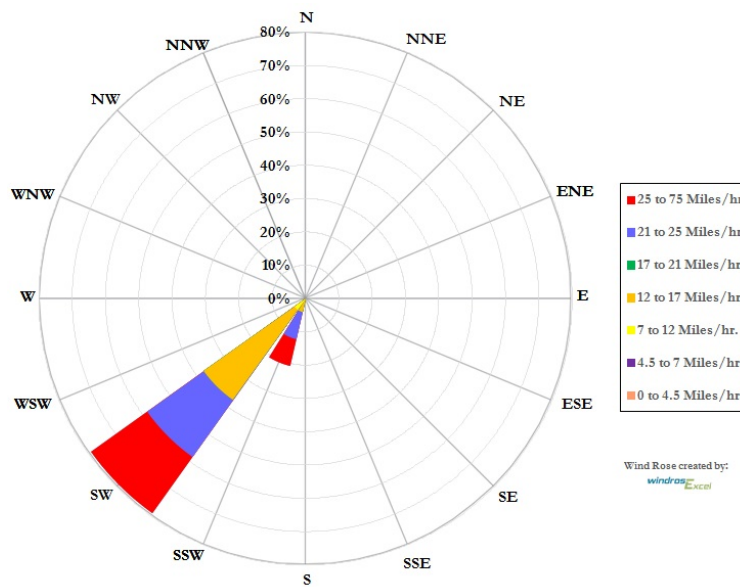
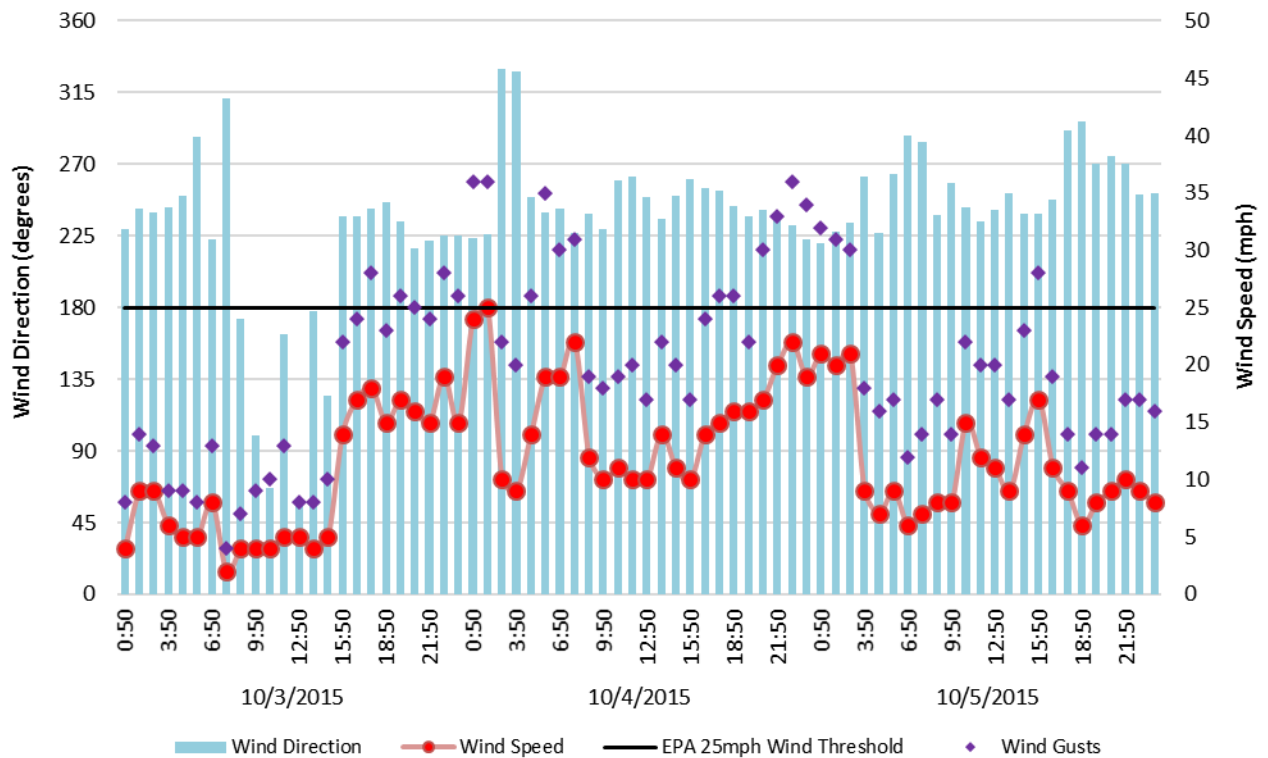


FIGURE B-19
MOUNTAIN SPRINGS GRADE WIND ROSE – OCTOBER 4

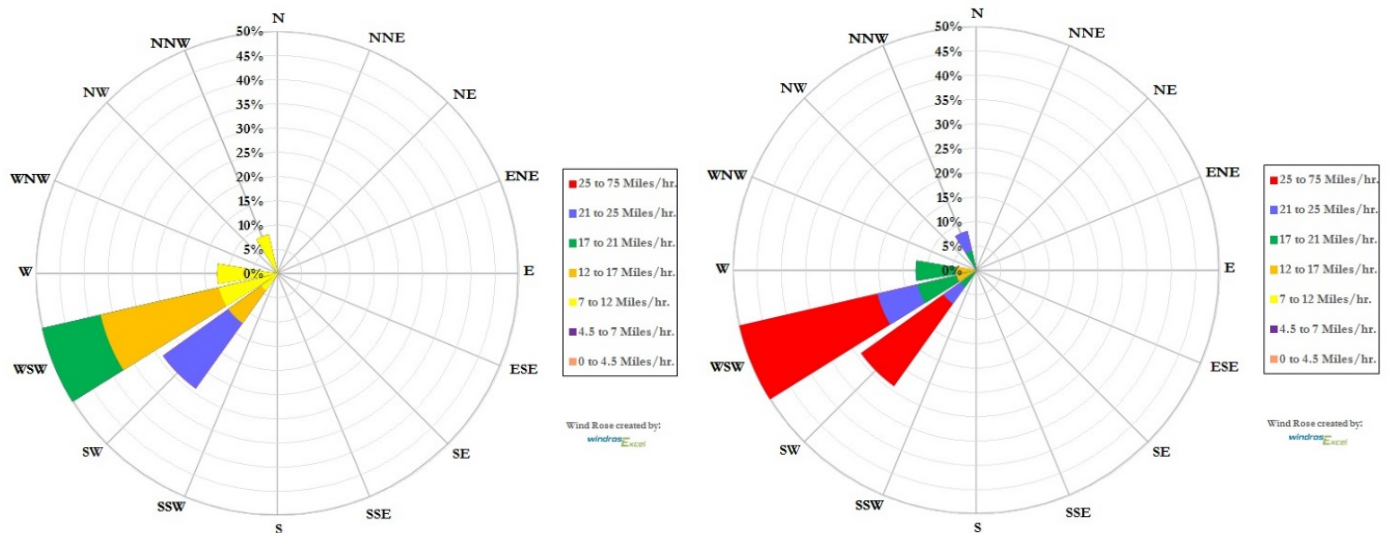


Figs B-18 & B-19: Mountain Springs Grade is on the desert slopes (elev. 2,044 ft.).
 MesoWest Station ID: TNSC1

FIGURE B-20
SUNRISE-OCOTILLO
WIND SPEED (AVERAGES) & GUSTS AND DIRECTION

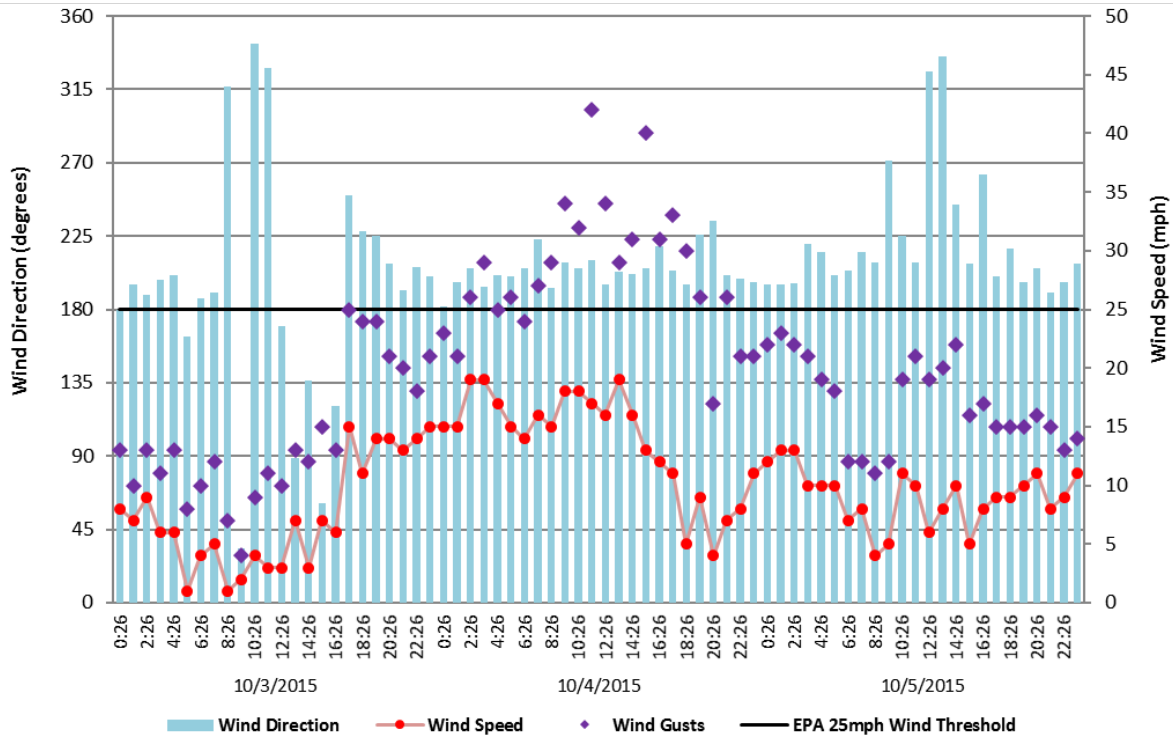


FIGURES B-21 & B-22
SUNRISE-OCOTILLO WIND ROSES – OCTOBER 4

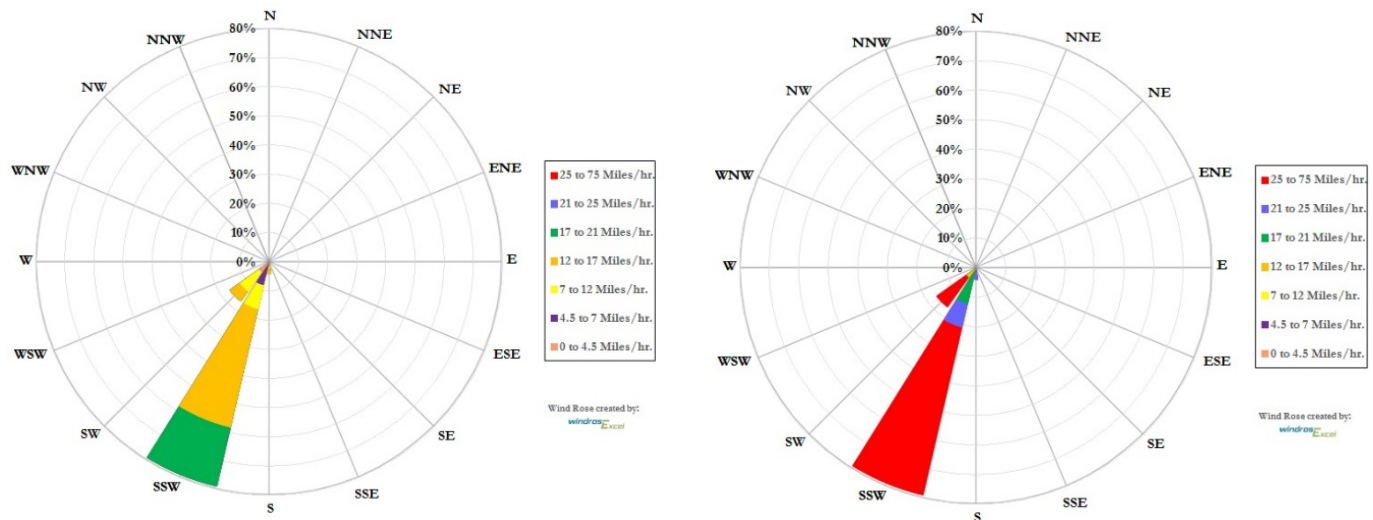


Figs B-20 & B-21 & B-22: Sunrise-Ocotillo is near the desert floor (elev. 695 ft.). The right wind rose is for gusts. MesoWest Station ID: IMPSD

FIGURE B-23
FISH CREEK MOUNTAINS
WIND SPEED (AVERAGES) & GUSTS AND DIRECTION



FIGURES B-24 & B-25
FISH CREEK MOUNTAINS WIND ROSES – OCTOBER 4



Figs B-23 & B-24 & B-25: The Fish Creek Mountains are west of Brawley and Westmorland, near the desert floor (elev. 781 ft.). The right wind rose is for gusts. MesoWest Station ID: FHCC1

FIGURE B-26 IMPERIAL COUNTY AIRPORT QCLCD

U.S. Department of Commerce
National Oceanic & Atmospheric Administration

QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (final) HOURLY OBSERVATIONS TABLE IMPERIAL COUNTY AIRPORT (03144) IMPERIAL, CA (10/2015)

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801

Elevation: -58 ft. below sea level
Latitude: 32.834
Longitude: -115.578
Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Weather Type	Dry Bulb Temp (F)	Dry Bulb Temp (C)	Wet Bulb Temp (F)	Wet Bulb Temp (C)	Dew Point Temp (F)	Dew Point Temp (C)	Rel Humid %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in. hg)	Press Tend	Net 3-hr Chg (mb)	Sea Level Pressure (in. hg)	Report Type	Precip. Total (in)	Alti-meter (in. hg)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
04	0053	12	CLR	10.00		73	22.8	61	16.3	53	11.7	50	8	270		29.54			29.49	AA		29.48
04	0153	12	CLR	10.00		73	22.8	62	16.5	54	12.2	52	6	270		29.53			29.47	AA		29.47
04	0253	12	CLR	10.00		73	22.8	62	16.5	54	12.2	52	11	280		29.53			29.47	AA		29.47
04	0353	12	CLR	10.00		73	22.8	62	16.5	54	12.2	52	11	270		29.54			29.49	AA		29.49
04	0453	12	CLR	10.00		73	22.8	61	16.3	53	11.7	50	11	280		29.57			29.51	AA		29.51
04	0553	12	CLR	10.00		73	22.8	61	16.3	53	11.7	50	16	280		29.58			29.52	AA		29.52
04	0653	12	CLR	10.00		75	23.9	61	16.2	51	10.6	43	14	280		29.61			29.56	AA		29.55
04	0753	12	CLR	10.00		79	26.1	62	16.7	50	10.0	36	16	260		29.63			29.57	AA		29.57
04	0853	12	CLR	10.00		83	28.3	64	17.5	50	10.0	32	17	250		29.63			29.57	AA		29.57
04	0953	12	OVC055	10.00		84	28.9	64	17.9	51	10.6	32	9	200		29.64			29.59	AA		29.58
04	1053	12	SCT065	10.00		94	28.9	65	18.2	52	11.1	33	9	190		29.64			29.58	AA		29.58
04	1153	12	BKN070	10.00		86	30.0	66	18.6	52	11.1	31	5	VR		29.63			29.57	AA		29.57
04	1253	12	FEW070	10.00		87	30.6	64	17.8	48	8.9	26	10	280		29.61			29.55	AA		29.55
04	1353	12	CLR	10.00		87	30.6	65	18.5	51	10.6	29	16	280	23	29.59			29.54	AA		29.54
04	1453	12	SCT090	10.00		87	30.6	65	18.3	50	10.0	28	11	310	23	29.59			29.54	AA		29.54
04	1553	12	FEW095	10.00		85	29.4	64	17.9	50	10.0	30	18	280	24	29.59			29.54	AA		29.53
04	1653	12	BKN095	10.00		82	27.8	64	17.6	51	10.6	34	20	270	28	29.61			29.55	AA		29.55
04	1753	12	SCT095	10.00		78	25.6	63	17.0	52	11.1	40	23	280	30	29.62			29.56	AA		29.56
04	1853	12	CLR	10.00		73	23.9	62	16.4	52	11.1	45	21	280	29	29.64			29.57	AA		29.57
04	1953	12	BKN095	10.00		75	23.9	62	16.4	52	11.1	45	20	270	30	29.65			29.59	AA		29.59
04	2053	12	SCT095	10.00		74	23.3	61	15.9	51	10.6	45	16	290	24	29.67			29.61	AA		29.61
04	2153	12	FEW090	10.00		73	22.8	60	15.7	51	10.6	46	10	320		29.69			29.64	AA		29.63
04	2253	12	BKN090	10.00		74	23.3	60	15.7	50	10.0	43	10	310		29.71			29.65	AA		29.65
04	2353	12	BKN080 OVC095	10.00		74	23.3	61	16.0	51	10.6	45	10	320		29.72			29.66	AA		29.66

Dynamically generated Thu Apr 14 18:41:40 EDT 2016 via <http://www.ncdc.noaa.gov/qclcd/QCLCD>

FIGURE B-27 EL CENTRO NAF QCLCD

U.S. Department of Commerce
National Oceanic & Atmospheric Administration

QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (may be updated) HOURLY OBSERVATIONS TABLE NAF (23199) EL CENTRO, CA (10/2015)

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801

Elevation: -42 ft. below sea level
Latitude: 32.816
Longitude: -115.683
Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Weather Type	Dry Bulb Temp (F)	Dry Bulb Temp (C)	Wet Bulb Temp (F)	Wet Bulb Temp (C)	Dew Point Temp (F)	Dew Point Temp (C)	Rel Humid %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in. hg)	Press Tend	Net 3-hr Chg (mb)	Sea Level Pressure (in. hg)	Report Type	Precip. Total (in)	Alti-meter (in. hg)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
04	0056	5	CLR	10.00		75	23.9	61	16.1	51	10.6	43	14	260		29.54			29.54	AA		29.50
04	0156	5	CLR	10.00		74	23.3	62	16.5	53	11.7	48	15	260		29.53			29.54	AA		29.49
04	0256	5	CLR	10.00		74	23.3	62	16.5	53	11.7	48	17	260		29.54			29.54	AA		29.50
04	0356	5	CLR	10.00		74	23.3	62	16.5	53	11.7	48	15	260		29.55			29.56	AA		29.51
04	0456	5	CLR	10.00		73	22.8	60	15.7	51	10.6	46	15	270		29.58			29.58	AA		29.54
04	0556	5	CLR	10.00		73	22.8	60	15.7	51	10.6	46	20	260		29.59			29.59	AA		29.55
04	0656	5	CLR	10.00		76	24.4	61	15.9	49	9.4	39	17	250		29.62			29.62	AA		29.58
04	0756	5	CLR	10.00		80	26.7	62	16.4	48	8.9	33	18	250		29.64			29.64	AA		29.60
04	0856	5	CLR	10.00		83	28.3	62	16.8	47	8.3	28	22	230	30	29.65			29.65	AA		29.61
04	0956	5	BKN060	10.00		83	28.3	62	16.8	47	8.3	28	16	220	25	29.65			29.65	AA		29.61
04	1056	5	FEW065	10.00		84	28.9	65	18.2	52	11.1	33	7	160	20	29.64			29.65	AA		29.60
04	1156	5	FEW065 FEW080	10.00		86	30.0	64	17.6	48	8.9	27	0	000		29.62			29.62	AA		29.58
04	1232	5	BKN080	10.00		86	30.0	63	16.9	45	7.2	24	14	290	22	29.62			M	SP		29.58
04	1256	5	BKN090	10.00		86	30.0	63	17.4	47	8.3	26	20	260	26	29.61			29.62	AA		29.57
04	1356	5	BKN090	10.00		87	30.6	65	18.3	50	10.0	28	25	270	30	29.60			29.61	AA		29.56
04	1456	5	FEW090	10.00		86	30.0	64	17.6	48	8.9	27	21	270		29.60			29.60	AA		29.56
04	1556	5	CLR	10.00		85	29.4	63	17.2	47	8.3	27	23	270		29.60			29.60	AA		29.56
04	1656	5	OVC090	10.00		81	27.2	63	17.4	51	10.6	35	24	260		29.62			29.62	AA		29.56
04	1756	5	FEW085	10.00		76	24.4	62	16.4	51	10.6	42	23	270		29.63			29.64	AA		29.59
04	1856	5	CLR	10.00		75	23.9	61	16.2	51	10.6	43	20	280		29.66			29.66	AA		29.62
04	1956	5	BKN095	10.00		75	23.9	61	16.2	51	10.6	43	22	280		29.67			29.67	AA		29.63
04	2056	5	CLR	10.00		74	23.3	60	15.7	50	10.0	43	18	280		29.68			29.68	AA		29.64
04	2156	5	CLR	10.00		73	22.8	60	15.5	50	10.0	44	15	290		29.70			29.70	AA		29.66
04	2256	5	BKN090	10.00		74	23.3	60	15.7	50	10.0	43	16	290		29.71			29.71	AA		29.67
04	2356	5	BKN080 BKN100	10.00		74	23.3	60	15.7	50	10.0	43	18	280		29.73			29.73	AA		29.69

Dynamically generated Thu Apr 14 18:39:27 EDT 2016 via <http://www.ncdc.noaa.gov/qclcd/QCLCD>